

WIKIPEDIA

Turtle (syntax)

Terse RDF Triple Language (Turtle) is a syntax and file format for expressing data in the Resource Description Framework (RDF) data model. Turtle syntax is similar to that of SPARQL, an RDF query language. It is a common data format for storing RDF data, along with N-Triples, JSON-LD and RDF/XML.

RDF represents information using semantic triples, which comprise a subject, predicate, and object. Each item in the triple is expressed as a Web URI. Turtle provides a way to group three URIs to make a triple, and provides ways to abbreviate such information, for example by factoring out common portions of URIs. For example, information about Huckleberry Finn could be expressed as:

```
<http://example.org/person/Mark_Twain>
<http://example.org/relation/author>
<http://example.org/books/Huckleberry_Finn> .
```



History

Turtle was defined by Dave Beckett as a subset of Tim Berners-Lee and Dan Connolly's Notation3 (N3) language, and a superset of the minimal N-Triples format. Unlike full N3, which has an expressive power that goes much beyond RDF, Turtle can only serialize valid RDF graphs. Turtle is an alternative to RDF/XML, the originally unique syntax and standard for writing RDF. As opposed to RDF/XML, Turtle does not rely on XML and is generally recognized as being more readable and easier to edit manually than its XML counterpart.

SPARQL, the query language for RDF, uses a syntax similar to Turtle for expressing query patterns.

In 2011, a working group of the World Wide Web Consortium (W3C) started working on an updated version of RDF, with the intention of publishing it along with a standardised version of Turtle. This Turtle specification was published as a W3C Recommendation on 25 February 2014.^[1]

A significant proportion of RDF toolkits include Turtle parsing and serializing capability. Some examples of such toolkits are Redland, RDF4J, Jena, Python's RDFLib and JavaScript's N3.js (<http://github.com/rdfjs/N3.js>).

Example

The following example defines 3 prefixes ("rdf", "dc", and "ex"), and uses them in expressing a statement about the editorship of the RDF/XML document:

```
@prefix rdf: <http://www.w3.org/1999/02/22-rdf-syntax-ns#> .
@prefix dc: <http://purl.org/dc/elements/1.1/> .
@prefix ex: <http://example.org/stuff/1.0/> .
```

Terse RDF Triple Language	
Filename extension	.ttl
Internet media type	text/turtle
Developed by	Dave Beckett (http://www.dajobe.org/)
Latest release	RDF 1.1 Turtle (REC) (25 February 2014)
Type of format	Semantic Web
Container for	RDF data
Extended from	N-Triples, Notation3
Extended to	TriG_(syntax)
Website	www.w3.org/TR/turtle/ (https://www.w3.org/TR/turtle/)

```
<http://www.w3.org/TR/rdf-syntax-grammar>
  dc:title "RDF/XML Syntax Specification (Revised)" ;
  ex:editor [
    ex:fullname "Dave Beckett";
    ex:homePage <http://purl.org/net/dajobe/>
  ] .
```

(Turtle examples are also valid Notation3).

The example encodes an RDF graph made of four triples, which express these facts:

- The W3C technical report on RDF syntax and grammar has the title *RDF/XML Syntax Specification (Revised)*.
- That report's editor is a certain individual, who in turn
 - Has full name *Dave Beckett*.
 - Has a home page at a certain place.

Here are the triples made explicit in N-Triples notation:

```
<http://www.w3.org/TR/rdf-syntax-grammar> <http://purl.org/dc/elements/1.1/title> "RDF/XML Syntax Specification (Revised)" .
<http://www.w3.org/TR/rdf-syntax-grammar> <http://example.org/stuff/1.0/editor> _:bnode .
_:bnode <http://example.org/stuff/1.0/fullname> "Dave Beckett" .
_:bnode <http://example.org/stuff/1.0/homePage> <http://purl.org/net/dajobe/> .
```

The MIME type of Turtle is text/turtle. The character encoding of Turtle content is always UTF-8.^[2]

Named graphs

TriG RDF syntax extends Turtle with support for named graphs.

See also

- N-Triples
- Notation3 (N3)
- LV2

References

1. "RDF 1.1 Turtle - Terse RDF Triple LanguageTurtle" (<http://www.w3.org/TR/turtle/>). World Wide Web Consortium (W3C). 25 February 2014. Retrieved 16 December 2015.
2. "MIME Media Types: text/turtle" (<https://www.iana.org/assignments/media-types/text/turtle>). Internet Assigned Numbers Authority (IANA). 28 March 2011. Retrieved 27 November 2011.

External links

- Turtle Specification (<http://www.w3.org/TR/turtle/>)
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